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MONTHLY



GULL

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OCTOBER MEETING: The next regular meeting of the Association will be held on Thursday evening, 14th inst., at eight o'clock sharp, in the Lecture Hall of the California Development Board, mezzanine floor of the Ferry Building.

Dr. Frederick W. D'Evelyn will address the Association on the subject of "King Penguins" (*Aptenodytes Patagonica*), including an account of the first King Penguin chick hatched and raised outside the Antarctic regions, illustrated by original photographs. Through Dr. D'Evelyn, the Association has gratefully acknowledged to Professor Cossar-Ewart, University of Edinburgh; to Miss Dorothy Maekenzie, F. Z. S., and to T. H. Gillespie, Esq., Director-Secretary Z. S. Scotland, its indebtedness for data and for the special series of photographs from which slides have been prepared for this occasion.

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OCTOBER FIELD TRIP will be taken on Sunday, October 17th, to and around Lake Merced. East Bay members should take ferry boat reaching San Francisco about 8:40 a. m. and go thence by Mission Street car, line No. 12, with "Ocean" sign. Leave car at Fortieth Avenue and Sloat Boulevard. San Francisco members take Ingleside car, line No. 17, and transfer to car line No. 12 at Nineteenth Avenue and Sloat Boulevard and ride west on the boulevard to Fortieth Avenue.

Party will form at 9:30 a. m., at entrance to nurseries of MacRorie & McLaren on Sloat Boulevard, near the point where Fortieth Avenue intersects same. Bring lunch and drinking water. Leader, Mr. C. R. Thomas.

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PROCEEDINGS OF THE SEPTEMBER MEETING: The forty-fourth regular meeting of the Association was held on September 2d in the Ferry Building, with President D'Evelyn in the chair; Mrs. C. R. Smith, Secretary; twenty-three members and fourteen guests in attendance.

Mr. Leverett Mills Loomis, F. A. O. U., Honorary Member of the Association, favored the members with an exposition of his views as to "How Migrating Birds Find Their Way," and extracts from his very interesting paper are given below.

* * *

At a meeting of the Board of Directors on August 25th there were elected to membership Miss Jessie G. Crittenden, Mrs. Ynes de Reygadas and Miss Helen Rosemont.

HOW MIGRATING BIRDS FIND THEIR WAY

Extracts from Paper read before the Association, September 2, 1920, by
Mr. Leverett Mills Loomis, F. A. O. U.

When shooting shearwaters on the ocean off Point Pinos, California, I observed that my boatman never had any difficulty in making Monterey in a thick fog. I asked him how he kept his location; in reply he told me that when we reached the ocean he always noted the variable currents and made allowance for the drift, and that he never allowed himself to lose the points of the compass when circling about to enable me to pick up the birds I had shot. It seems reasonable to conclude that subconscious observance of physical phenomena is the bottom fact in the alleged sense of direction in human beings.

The homing pigeon affords no evidence of the functioning of any hypothetical sense organs. Birds have great visual powers and their memory of place and direction is acute, as is witnessed by the ease with which they find their way to their nests in the chaparral, in a sea of tules, or elsewhere. Birds migrate in the night time as well as in the day time and over both land and sea. In journeying over the land in the night time they fly at sufficient elevation to overlook the landscape, the prominent features of which stand out boldly when the sky is clear, as upon a relief map. When the sky becomes overcast, the night migrants fly at a lower elevation, and when a dense fog prevails, their journey is interrupted, evidencing that they are guided by the landscape.

My observations in the day time on the ocean off Point Pinos, California, afford additional evidence that birds are guided by landmarks when migrating in the vicinity of the land.

Bonaparte gulls in their northward migration in May uniformly made an extended retrograde movement, apparently in order to sight a distant headland. For days, flocks of these gulls, instead of coming up the coast, came down the coast from the north, following the eastern shore of Monterey Bay. When they reached the Monterey harbor they changed their course to the west and followed the south shore of the bay for about four miles to Point Pinos, where they again altered their course and headed straight for Point Santa Cruz, about twenty-two miles to the northward, in the detour flying south, then west, and finally north.

In their southward migration, northern phalaropes also followed the trend of the coast-line. During August, when their migration was at its height, flock after flock appeared from the north, holding a southerly course off the eastern shore of Monterey Bay, a westerly one off the south shore, and a southerly one again after passing Point Pinos. When the ocean fog invaded the land, hiding the landmarks, these birds became bewildered, but when the fog receded, unveiling the landmarks, their bewilderment ceased, manifesting that they were guided by the landmarks and that they were not endowed with a mysterious sense of direction.

The hosts of shearwaters, migrating south, likewise followed the coast-line and likewise became bewildered when the landmarks were hidden by the fog.

October 2d, at seven in the morning, flocks of black-vented shearwaters were passing along the south shore of Monterey Bay, almost at the surf, a thick fog hiding the land. They came from the east and disappeared in the west. Following in their wake, I soon discovered that close to the shore an

THE GULL

avenue of flight was established, along which many flocks were heading out to the ocean at Point Pinos. They displayed an unusual timidity, sheering wildly from the boat as it loomed up before them in the fog. The belt of kelp and the land seemed also to fill them with fear, those happening between these bugaboos being in special straits, shunning first the one, then the other. By the time I reached Point Pinos orderly movements had nearly ceased, confusion reigning. The birds were flying about in all directions, those in extreme bewilderment in circles. Later, the fog lightened sufficiently to reveal the shore-line south of Point Pinos, and immediately order was restored and regular progress southward resumed.

If birds are endowed with a superhuman faculty for determining direction, as is claimed by many ornithologists, why were these shearwaters bewildered when the land was hidden by fog? Why did they immediately resume their way when the fog was dispelled sufficiently to reveal the landmarks? If they had possessed any directing faculty other than the ordinary phenomena, it would not have failed them in these instances. The pendulum swings freely at times between the marvelous and commonplace. William Brewster, an advanced student of bird migration, abandoned the fact of guidance by physical phenomena and reverted to the theory of a mysterious sense of direction when he learned that the murrelets of Bogoslof Islands readily found their way through the fog from their fishing stations to their rookery. There is nothing mysterious in the murrelets' performance. The Brandt cormorants nesting in the vicinity of Point Pinos had no difficulty in finding their way in the fogs that bewildered the shearwaters and phalaropes. Like my boatman, the cormorants were at home on this bit of coast, and in consequence kept their bearings in the fog. But the shearwaters migrating down the coast had no opportunity of determining their position by local landmarks, and consequently lost their way.

The Gulf of Mexico, which is traversed and retraversed by the noddy and sooty terns in their migrations, is not a pathless sea. Besides its shore-line, it has persistent air and water currents of the kind that define the metes and bounds of highly pelagic birds. The range of the wandering albatross on the north, for instance, is defined by the southeast trade-winds, and the range of the black-footed albatross on the south by the northeast trades.

To sum the whole matter in brief: All the evidence before us witnesses that migratory birds find their way by landmarks, supplemented by persistent air and water currents when the migration routes are far off shore.

In fine, the solution of the problem is **not** found in the marvelous.

It has been well said: "The day is passing when scientists seek to employ striking or extraordinary phenomena in the solutions of their problems; rather are they looking to that which appears insignificant and trifling."



AUGUST FIELD TRIP was taken on Sunday, August 15th, to the campus of the University of California, under the leadership of Miss Griffin. The day was unusually warm and we missed some of the stand-by members who were so fortunate as to be away enjoying vacation trips. A very interesting guest from Seattle, but formerly of Berkeley, Mrs. C. Norman Compton, was with us. She is said to be a pioneer in bird club work in her northern home. Other guests were Mrs. Reygadas and Mr. Elmore. Mem-

THE GULL

bers present were: Misses Ames, Chapin, Flynn, Griffin, Potter, Van Gaasbeck and Wilson; Mr. and Mrs. Smith; Mesdames G. E. Kelly and G. T. Roe.

One of the most interesting sights of the day was a pair of olive-sided flycatchers, endeavoring to satisfy the appetites of four husky young birds, perched high up on a pair of wires.

Those who crossed the bay saw the Western and California gulls and the curlew. Birds observed on the campus were: California quail, flicker, sparrow hawk, Anna and Allen hummers, olive-sided flycatcher, Western wood pewee, linnet, green-backed goldfinch, junco and song sparrow, San Francisco and California towhees, warbling vireo, yellow, lutescent and pileolated warblers, creeper, titmouse, bush-tit, wren-tit, russet-backed thrush and robin. Twenty-six species.

HELEN FLYNN.



SEPTEMBER FIELD TRIP was taken on Sunday, September 5th, to Bay Farm Island. The attendance was cut down by the fact that the trip came within a three-day holiday, and the season was somewhat early for some old friends among the shore birds. Birds seen were: Western and California gulls, Forster tern, Farallon cormorant, pintail, great blue and black-crowned night herons, dowitchers, least and Western sandpipers and Western willet, Hudsonian curlew, black-bellied and snowy plover and killdeer, California quail, sharp-shinned hawk, Anna hummer, California jay and meadow lark, Brewer blackbird, linnet, green-backed goldfinch, California towhee, barn swallow and shrike. Twenty-six species in all.

Members present were: Misses Ames, Gunn, King and Manley, and Mrs. G. E. Kelly.

ISABEL AMES.



INFORMAL FIELD TRIPS for the purpose of observing birds which are rather rare in this vicinity were made during the month by no less than six parties. Mrs. G. E. Kelly stirred up the membership by discovering stilts on the lands being inundated by gun clubs for the fall shooting season in the vicinity of Baumberg Station, near Mt. Eden. Those who were able to make the trip found avocets, stilts, yellow-legs, spotted and solitary sandpipers, thousands of pintails in eclipse plumage, and large flocks of white pelicans. The neighborhood was being policed by hundreds and hundreds of young swallows, whose zeal in absorbing the mosquito crop made the place bearable for the observers.

AUDUBON ASSOCIATION OF THE PACIFIC

FOR THE STUDY AND THE PROTECTION OF BIRDS

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